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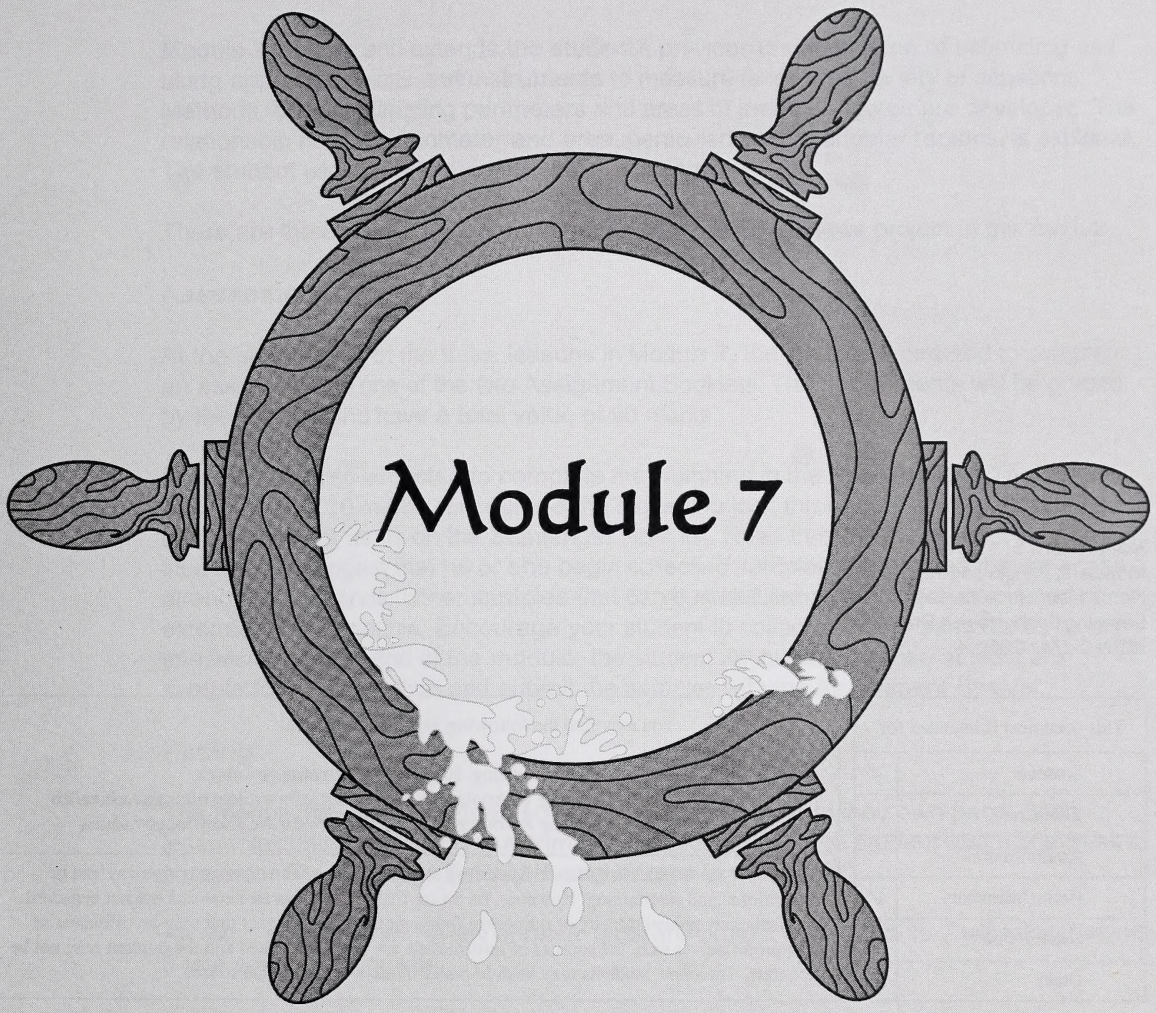
Mathematics 5



Home Instructor's Guide and Assignment Booklet 7A

Learning Technologies Branch

Alberta LEARNING

Mathematics 5
Module 7: Length and Area
Home Instructor's Guide and Assignment Booklet 7A
Learning Technologies Branch
ISBN 0-7741-2069-X

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	

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- Alberta Learning, **http://www.learning.gov.ab.ca**
- Learning Technologies Branch, **http://www.learning.gov.ab.ca/ltb**
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Module 7: Length and Area

Overview

Module 7 reviews and extends the student's previous understanding of estimating and using appropriate units and instruments to measure length in a variety of situations. Methods for approximating perimeters and areas of irregular figures are developed. The relationship between perimeter and area, particularly of rectangular regions, is explored. The student uses measurement to solve problems.

There are three lesson assignments and a Number in the News project in this module.

Assessment

At the end of each of the three lessons in Module 7, the student is directed to complete an assignment in one of the two Assignment Booklets. The assignments will be graded by the teacher and have a total value of 90 marks.

Students are also expected to complete the Numbers in the News project. This project has a value of 10 marks. Encourage the student to look through a newspaper at least once a week for items on the Scavenger Hunt list. Read through the list with your student and suggest that he or she begin collecting samples of the ideas that he or she already understands. Other samples that can be collected as ideas are introduced or extended in the module. Encourage your student to collect as many samples as he or she wishes. At the end of the module, the student will need to choose at least one sample for each question and submit the samples with the Assignment Booklet.

Pacing

The module has been designed so that students can work at their own pace. Each lesson, including the lesson assignment, will take the average student about one week to complete. The Challenge Activity in each lesson is optional.

Allowing extra time for review of basic facts and project work, Module 7 will take students 3 to 4 weeks to complete.

Lesson 1: Using Linear Units

Overview

Lesson 1 reviews and extends the student's understanding of the many ways that linear units of length are used for measuring.

Special Requirements

You may gather the following materials for your student to use in this lesson:

- string
- ruler
- metre-stick
- metal measuring tape
- cloth measuring tape
- a variety of cylindrical items

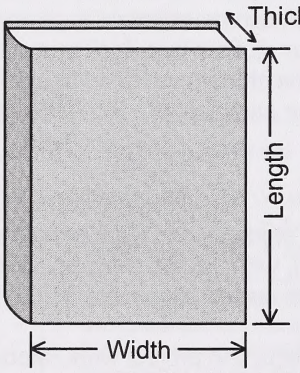
Sharing Time

There are three Sharing Time exercises in Lesson 1—at the end of Activity 1, Activity 2, and Activity 3.

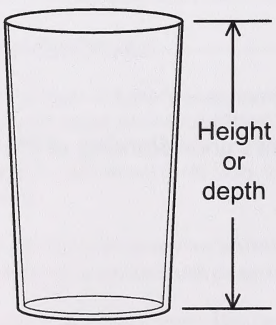
Activity 1 Sharing Time

1. Students may explain the terms orally using objects as references.

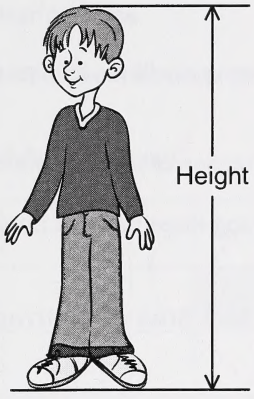
Length is usually the longest dimension of an object like a textbook.



Distance around is the perimeter.



Distance around is the circumference.



Distance around the waist is a person's girth.

2. Measuring tools like rulers and metre-sticks are used to measure length, thickness, width, height, and depth. Measuring tapes (cloth or metal) are used to measure longer distances, perimeter, and circumference.

Activity 2 Sharing Time

Practice and Homework Book, page 89

Some of the answers will vary. Sample answers are given.

What to Look For	Object Found	Actual Measurement
The circumference is 30 cm to 40 cm.	globe	38 cm
The capacity is 200 mL to 400 mL.	—	—
The length is 1 m to 2 m.	desk	153 cm or 1.53 m
The height is about 2 m.	door	213 cm or 2.13 m
The thickness is about 2 cm.	hardcover math textbook	1.9 cm
The width is about 20 cm.	hardcover math textbook	2.15 cm
The perimeter is about 50 cm.	calculator	36 cm

Activity 3 Sharing Time

The height of a telephone pole would be many times its circumference. It is tall and skinny.

The height of a pizza pan would be a fraction of its circumference. It is short and wide.

The height of a tennis ball can (containing three balls) is approximately equal to its circumference.

Lesson 2: Finding the Perimeter and Area of an Irregular Shape

Overview

Lesson 2 develops and applies methods for approximating perimeters and areas of irregular shapes.

Special Requirements

You may gather the following materials for your student to use in this lesson:

- string
- 1-cm grid paper
- newspaper
- metre-stick
- tape
- red marker
- geoboard (optional)
- a variety of household items

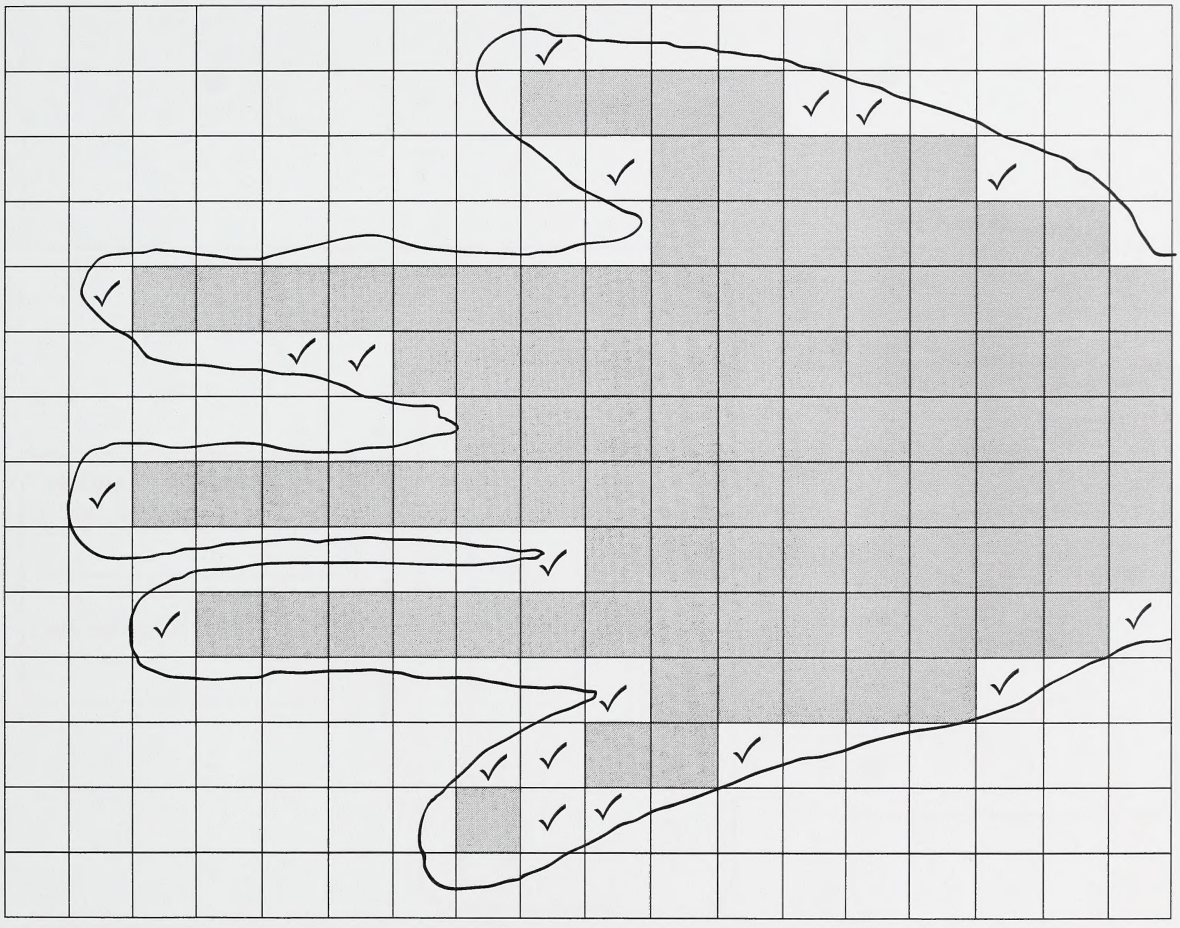
Sharing Time

There is one Sharing Time exercise in Lesson 2—at the end of Activity 2.

Activity 2 Sharing Time

Practice and Homework Book, page 93

1. Estimated Area: 100 cm^2 Estimated Perimeter: 100 cm



2. Area: 121 cm^2 Perimeter: 88 cm

3. I used string to trace the perimeter and then measured the string. I shaded the whole squares in the irregular figure and counted the shaded squares. Then I added the squares that have more than half inside the figure. $(102 + 19 = 121)$

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ASSIGNMENT BOOKLET 7A

Mathematics 5

Module 7: Lesson 1 Assignment and Lesson 2 Assignment

Home Instructor's and Student's Comments:

STUDENT FILE NUMBER
(if label is missing or incorrect)

_____

Date Submitted:

_____

Apply Module Label Here

Name

Address

Postal Code

Please verify that preprinted label is for correct course and module.

FOR SCHOOL USE ONLY

Assigned Teacher:

_____

Date Assignment Received:

_____

Grading:

_____

Teacher's Comments

_____

Teacher's Signature

Home Instructor: Keep this sheet when it is returned to you as a record of the student's progress.

INSTRUCTIONS FOR SENDING IN THIS DISTANCE LEARNING ASSIGNMENT BOOKLET

When you register for distance learning courses, you are expected to send in Assignment Booklets for corrections regularly. Try to send each Assignment Booklet as soon as you have completed it. Before sending your Assignment Booklet, please check the following:

- Are all the assignments completed? If not, explain why.
- Has your work been reread to be sure the spelling and details are correct?
- Is the record form filled out and the correct module label attached?

MAILING

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Send all letters in a separate envelope.

2. Postage Rates

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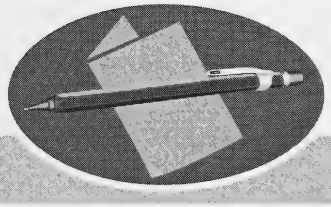
Mathematics 5

Module 7

Length and Area

Assignment Booklet 7A



Learning Technologies Branch

Alberta LEARNING

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Lesson 1 Assignment	30	
Lesson 2 Assignment	26	
	56	

Teacher's Comments

Mathematics 5
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Assignment Booklet 7A
Lesson 1 Assignment and Lesson 2 Assignment
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ASSIGNMENT BOOKLET 7A
MATHEMATICS 5—MODULE 7: LENGTH AND AREA

Your mark on this module will be determined by how well you do your assignments in the Assignment Booklets.

Work slowly and carefully. If you are having difficulties, go back and review the appropriate lessons.

There are two lesson assignments in this Assignment Booklet. The total value of these assignments is 56 marks. The value of each assignment is stated in the left margin.

Be sure to proofread each assignment carefully.

(30)

Lesson 1 Assignment: Using Linear Units

1. Find a cereal box.

(3) **a.** If you need to describe the size of the box to someone else, what parts of the box would you measure?

(2) **b.** What units are appropriate and what measuring instrument would you use?

(3) **c.** Measure the parts. Sketch a picture of the cereal box you used. Identify the parts you measured and show their measures.

2. Choose a wall in your house.

(3) **a.** Measure the length of the wall to the nearest metre. _____ m

(2) **b.** When might you need to know the length of a wall to the nearest metre?

_____

_____

_____

(3) **c.** Measure the length of the wall to the nearest centimetre.

_____ cm

(2) **d.** When might you need to know the length of a wall to the nearest centimetre?

_____

_____

_____

(3) **e.** Measure the length of the wall to the nearest millimetre.

_____ mm

(3) **f.** When might you need to know the length of a wall to the nearest millimetre?

_____

_____

_____

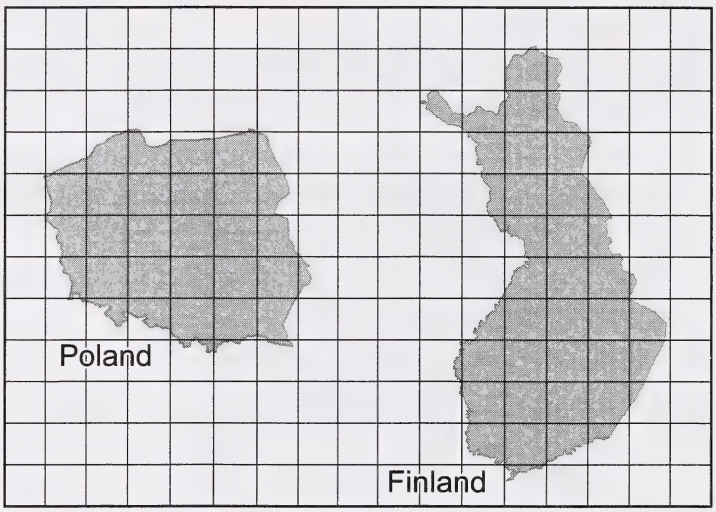
(6) **3.** Find three of the items listed in the following table. Choose appropriate units and measure their circumferences.

Item	Circumference
Compact Disc (CD)	
Lamp Pole	
Lamp Base	
Coffee Mug or Drinking Glass	
Saucer	

26

Lesson 2 Assignment: Finding the Perimeter and Area of an Irregular Shape

The following grid shows outlines of the countries of Poland and Finland. Use this grid to answer questions 1 to 5.



(3) **1. a.** Explain one way to estimate the area of each country in square units.

(3) **b.** Use your strategy to estimate the area of Poland in square units.

Approximate area of Poland: _____ square units

(3) **c.** Use your strategy to estimate the area of Finland in square units.

Approximate area of Finland: _____ square units

(3) **2. a.** Explain a strategy you can use to estimate the perimeter of each country in square units.

_____

_____

_____

_____

_____

(3) **b.** Use your strategy to estimate the area of Poland in square units.

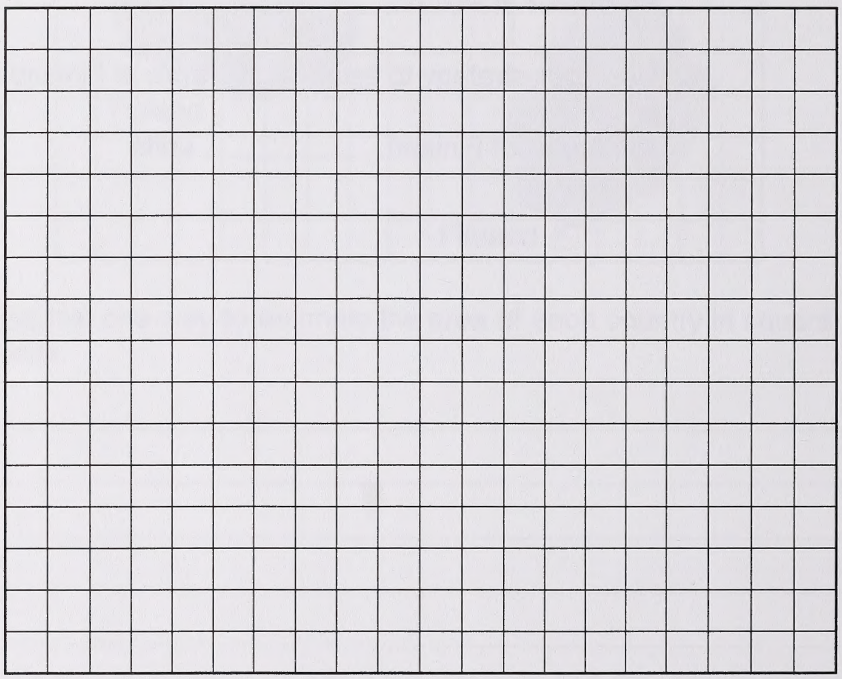
Perimeter of Poland: _____ units

(3) **c.** Use your strategy to estimate the area of Finland in square units.

Perimeter of Finland: _____ units

(3) **3. a.** Explain how you could outline a shape with more area but about the same perimeter as Finland.

(5) **b.** Outline your shape on the grid paper below.



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